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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,337	10/28/2003	Noriyuki Shiina	CU-3418	5598
26530	7590	03/22/2006	EXAMINER	
LADAS & PARRY LLP 224 SOUTH MICHIGAN AVENUE SUITE 1600 CHICAGO, IL 60604			PATTERSON, MARC A	
			ART UNIT	PAPER NUMBER
			1772	

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/695,337

Applicant(s)

SHIINA, NORIYUKI

Examiner

Marc A. Patterson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 16-30 and 33-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 16-30 and 33-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f):
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

WITHDRAWN REJECTIONS

1. The 35 U.S.C. 102(b) rejection of Claims 1, 7 – 8, 12, 16 – 20, 24 – 25, 29, 31 and 33 – 34 as being anticipated by Curtis (U.S. Patent Publication No. 2001/0046574), of record on page 2 of the previous Action, is withdrawn.

Specification

2. The disclosure is objected to because of the following informalities: The meaning of the term 'crayey,' which appears on page 26 of the disclosure, is unclear, and the term appears to be a typographical error.

Appropriate correction is required.

Claim Objections

3. Claims 2 and 19 are objected to because of the following informalities: The meaning of the phrase 'in a state that the inorganic lamellar is subjected completely to delamination' is unclear. Appropriate correction is required.
4. Claims 35 – 36 are objected to because of the following informalities: The meaning of the phrase 'mixing ratio' is unclear. For purposes of examination, the phrase will be interpreted to mean 'ratio.' Appropriate correction is required.

NEW REJECTIONS

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 7 – 8, 10 – 12, 16 – 18, 24 – 25, 27 – 29 and 33 – 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Frisk et al (WO01/19611).

U.S. Patent No. 6,872,459 is used as a translation. With regard to Claims 1, 7 – 8, 18 and 24 – 25, Frisk et al disclose a lamination product (laminated packaging material; column 13, lines 50 – 52) comprising an outermost layer (column 15, line 35), paper base (core of paper or paperboard; column 13, lines 53 – 55) and barrier layer (layer which improves oxygen gas barrier; column 14, line 5); the barrier layer is made of a resin composition comprising a polyamide resin and an inorganic compound (nylon clay hybrid, therefore comprising a mineral which is clayey; column 7, lines 38 – 40); the inorganic compound is lamellar (stratified; column 7, lines 43 – 45) and the barrier layer is extrusion coated (column 7, line 29) and is therefore a coating; the innermost layer comprises an ethylene – olefin copolymer polymerized with a metallocene catalyst (column 10, lines 36 – 38); the product comprises the layers in the claimed order (Figure 2).

With regard to Claims 10 – 11 and 27 – 28, the polyamide disclosed by Frisk et al is nylon MXD6 (column 7, line 30)

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With regard to Claims 12 and 29, the outermost layer disclosed by Frisk et al comprises a polyolefin resin having heat sealability (column 14, lines 12 – 15).

With regard to Claim 31, the lamination product disclosed by Frisk et al further comprises an innermost polyolefin resin having heat sealability (column 14, line 7).

With regard to Claims 16 – 17 and 33 – 34, Frisk et al disclose the use of adhesive layers to facilitate the adhesion between the innermost layer and the other layers (column 15, lines 54 – 55).

With regard to Claims 35 – 36, the olefin disclosed by Frisk et al is butene (column 10, line 43); because Frisk et al disclose a copolymer of ethylene and butene, Frisk et al disclose a copolymer having a 1:1 molar ratio of ethylene to butane, therefore a ratio of olefin to ethylene in the range of 1 to 50% by weight.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2 – 3, 13, 19 – 20 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frisk et al (WO01/19611) in view of Curtis (U.S. Patent Publication No. 2001/0046574).

Frisk et al disclose a laminate comprising an inorganic lamellar compound as discussed above. With regard to Claims 2 – 3 and 19 – 20, Frisk et al fail to disclose a lamellar compound each layer of which has a thickness of not more than 10 nm.

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Curtis teaches a lamellar compound each layer of which has a thickness of not more than 10 nm (30 Angstroms; paragraph 0013) in a laminate, for the purpose of obtaining a laminate having good barrier properties (barrier laminate; paragraph 0001). One of ordinary skill in the art would therefore have recognized the advantage of providing for the thickness of Curtis in Frisk et al, which comprises a laminate, depending on the desired barrier of the end product.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for a lamellar compound each layer of which has a thickness of not more than 10 nm in Curtis in order to obtain a laminate having good barrier properties as taught by Curtis.

With regard to Claims 13 and 30, Frisk et al also fail to disclose a paperboard having a basis weight of 80 to 600 g/m². However, Curtis et al disclose a weight that is selected depending on the desired grade of paperboard (paragraph 0027). Therefore, one of ordinary skill in the art would have recognized the utility of varying the basis weight to obtain the desired grade. Therefore, the grade would be readily determined by through routine optimization of the basis weight by one having ordinary skill in the art depending on the desired use of the end product as taught by Curtis et al.

It therefore would be obvious for one of ordinary skill in the art to vary the basis weight of the paperboard of Frisk et al in order to obtain the desired grade, since the grade would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Curtis et al.

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9. Claims 4 – 5 and 21 – 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frisk et al (WO01/19611) in view of Mueller et al (U.S. Patent No. 6,403,231 B1).

Frisk et al disclose a laminate comprising an inorganic lamellar compound as discussed above. With regard to Claims 4 – 5 and 21 – 22, Frisk et al fail to disclose an inorganic lamellar compound comprising nylon MXD 6 and having an aspect ratio of 50 and a cation exchange capacity of not less than 30 milliequivalent / 100 grams.

Mueller et al teach a laminate (at least one layer; column 3, lines 21 – 27) comprising an inorganic lamellar compound (silicate layers having spacing; column 3, lines 45 – 49) comprising nylon MXD6 (column 4, lines 14 – 15) and having an aspect ratio of 50 (column 3, lines 40 – 44) and a cation exchange capacity of not less than 30 milliequivalent / 100 grams (column 7, lines 40 – 44) for the purpose of obtaining a laminate that is useful for packaging (column 7, lines 61 – 66). One of ordinary skill in the art would therefore have recognized the advantage of providing for the an inorganic lamellar compound comprising nylon MXD 6 and having an aspect ratio of 50 and a cation exchange capacity of not less than 30 milliequivalent / 100 grams of Mueller et al in Frisk et al, which is a laminate, depending on the desired application to packaging of the end product.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for an inorganic lamellar compound comprising nylon MXD 6 and having an aspect ratio of 50 and a cation exchange capacity of not less than 30 milliequivalent / 100 grams in Frisk et al in order to obtain a laminate that is useful for packaging as taught by Mueller et al.

10. Claims 6 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frisk et al (WO01/19611) in view of Ross et al (U.S. Patent No. 6,521,690 B1).

Frisk et al disclose a laminate comprising an inorganic lamellar compound as discussed above. With regard to Claims 6 and 23, Frisk et al fail to disclose a compound that is treated with an organic ammonium salt.

Ross et al teach an inorganic lamellar compound (layered silicate; column 5, lines 46 – 49) that is treated with an organic ammonium salt (column 5, lines 9 – 16) for the purpose of obtaining a compound that is highly dispersible in a wide variety of polymers (column 5, lines 6 – 8). One of ordinary skill in the art would therefore have recognized the advantage of providing for the organic ammonium salt of Ross et al in Frisk et al, which comprises an inorganic lamellar compound, depending on the desired dispersibility of the end product.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for an organic ammonium salt in Frisk et al in order to obtain a compound that is highly dispersible in a wide variety of polymers as taught by Ross et al.

11. Claims 9 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frisk et al (WO01/19611) in view of Usuki et al (U.S. Patent No. 4,889,885).

Frisk et al disclose a laminate comprising an inorganic lamellar compound and resin as discussed above. With regard to Claims 9 and 26, Frisk et al fail to disclose a volume ratio of inorganic lamellar compound to resin of 5/95 to 40/60.

Usuki et al teaches that the amount of inorganic lamellar compound (silicate; column 4, lines 40 – 42) in a polymer composite (dispersed in polyamide; column 4, lines 40 – 42) is selected depending on the desired reinforcing effect and molding property (column 4, lines 45 – 50). Therefore, one of ordinary skill in the art would have recognized the utility of varying the amount of inorganic lamellar compound to obtain the desired reinforcing effect and molding property. Therefore, the reinforcing effect and molding property of Frisk et al would be readily determined by through routine optimization of the amount of inorganic lamellar compound by one having ordinary skill in the art depending on the desired use of the end product as taught by Usuki et al.

It therefore would be obvious for one of ordinary skill in the art to vary the amount of inorganic lamellar compound, and therefore the volume ratio in Frisk et al in order to obtain the desired reinforcing effect and molding property, since the reinforcing effect and molding property would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Usuki et al.

ANSWERS TO APPLICANT'S ARGUMENTS

12. Applicant's arguments, and amendments, regarding the 35 U.S.C. 102(b) rejection of Claims 1, 7 – 8, 12, 16 – 20, 24 – 25, 29, 31 and 33 – 34 as being anticipated by Curtis (U.S. Patent Publication No. 2001/0046574), of record in the previous Action, have been considered and have been found to be persuasive. The rejection is therefore withdrawn. The new rejections above are directed to amended Claims 1 – 13, 16 – 30 and 33 – 36.

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Applicant's arguments regarding the objection to Claims 2 and 19 has been considered but has not been found to be persuasive because it is unclear how it is possible for the lamination product to include a layer that is completely delaminated.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc A Patterson whose telephone number is 571-272-1497. The examiner can normally be reached on Mon - Fri 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marc Patterson 3/20/06

Marc A. Patterson, PhD.
Primary Examiner
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